

# Major stoma-related morbidity in infants after stoma formation and closure

## A retrospective cohort study into incidences and risk factors

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### Aim

To assess major stoma-related morbidity and its associated risk factors after stoma formation and stoma closure.

### Methods

All infants ( $\leq$  three years) who received a stoma between 1998 and 2018 were retrospectively reviewed. The incidence of major stoma related morbidity (Clavien-Dindo grade  $\geq$ III) at stoma formation and stoma closure was the primary outcome. Risk factors for complications were identified using multivariate logistic regression.

### Results

In total 336 infants were included with a median follow-up of 6 (IQR 2-11) years. Following stoma formation, 27% (n=92/336) of the infants experienced major stoma related morbidity whilst this occurred in 23% (n=66/292) following stoma closure. High output stoma, prolapse and stoma stenosis were most common following formation whilst anastomotic leakage/stenosis, incisional hernia and adhesive obstructions were most common following closure. Infants with an ileostomy have a higher risk of developing major morbidity following stoma formation (OR:2.5; 95%-CI:1.3-4.7) as well as following closure (OR:2.7; 95%-CI:1.3-5.8).

### Discussion

Major stoma related morbidity is a frequent and severe clinical problem. The risk of morbidity should be considered when deliberating stoma formation.

Overall **39%** of the patients with a stoma experienced a **Clavien-Dindo  $\geq$ III**.

**Ileostomies are more at risk of complications than colostomies**



Baseline characteristic	Total = 336 N (%)
Male gender, n (%)	205 (61)
Premature, n (%)	137 (41)
Underlying disease	
Necrotising enterocolitis	109 (32)
Meconium peritonitis	9 (3)
Anorectal malformation	88 (26)
Hirschsprung disease	37 (11)
Intestinal atresia	29 (9)
Meconium ileus	20 (6)
Complex gastroschisis	12 (3)
Other	32 (10)
Type of stoma, n (%)	
Jejunostomy	17 (5)
Ileostomy	192 (57)
Colostomy	127 (38)